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## EUROPEAN PATENT APPLICATION

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Tokyo 100(JP)

㉔ DE FR GB IT NL

Applicant: TDK Corporation  
13-1, Nihonbashi 1-chome Chuo-Ku  
Tokyo-to(JP)

㉔ DE FR GB NL

Applicant: Tosoh Corporation  
4560, Oaza Tonda  
Shinnanyo-shi Yamaguchi-ken(JP)

㉔ DE FR GB NL

Applicant: Toyo Boseki Kabushiki Kaisha  
No.2-8, Dojima-hama 2-chome Kita-ku  
Osaka-shi Osaka 530(JP)

㉔ DE FR GB NL

㉗ Applicant: Kanegafuchi Chemical Industry  
Co., Ltd.

2-4 Nakanoshima 3-chome  
Kita-ku Osaka-shi Osaka-fu(JP)

㉔ BE CH DE FR GB IT LI NL

Applicant: MATSUSHITA ELECTRIC  
INDUSTRIAL CO., LTD.  
1006, Oaza Kadoma  
Kadoma-shi, Osaka-fu, 571(JP)

㉔ DE FR GB NL

Applicant: SEISAN KAIHATSU KAGAKU  
KENKYUSHO

15, Shimogamo Morimoto-cho  
Sakyo-ku Kyoto-shi Kyoto-fu(JP)

㉔ BE CH DE FR GB IT LI NL

Applicant: UBE INDUSTRIES, LTD.  
12-32, Nishihonmachi 1-chome  
Ube-shi, Yamaguchi-ken 755(JP)

㉔ DE FR GB NL

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Applicant: NEC CORPORATION  
7-1, Shiba 5-chome Minato-ku  
Tokyo 108-01(JP)

㉔ DE FR GB NL

Applicant: NIPPON MINING COMPANY  
LIMITED  
12-32, Akasaka 1-chome Minato-ku  
Tokyo(JP)

㉔ DE FR GB NL

Applicant: NIPPON STEEL CORPORATION  
6-3 Otemachi 2-chome Chiyoda-ku

㉗ Inventor: Takada, Toshio  
1, Nishisenouchi-cho Kitashirakawa  
Sakyo-ku, Kyoto-shi Kyoto-fu(JP)

Inventor: Terashima, Takahito

63, Higashioigura-cho Kitashirakawa  
Sakyo-ku, Kyoto-shi Kyoto-fu(JP)

Inventor: Bando, Yoshichika

8-15, Koyo-cho

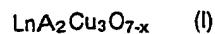
Ohtsu-shi Shiga-ken(JP)

㉗ Representative: Vossius & Partner  
Siebertstrasse 4 P.O. Box 86 07 67  
D-8000 München 86(DE)

EP 0 308 869

54) Thin film of single crystalline  $\text{LnA}_2\text{Cu}_3\text{O}_{7-x}$  having three-layered perovskite structure and process for producing the same.

55) A thin film consisting of a single crystalline oxide of the formula:



wherein Ln is at least one of the rare earth elements Y, Nd, Sm, Eu, Gd, Dy, Ho, Er, Tm and Yb and A is at least one of the alkaline earth metals Ba, Sr and Ca which has a three-layered perovskite structure in which

(1)the(001) plane,  
(2)the (110) plane or  
(3)the(103) plane  
of the crystal is parallel with the film surface is provided.



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	APPLIED PHYSICS LETTERS, vol. 51, no. 11, 14 September 1987, NEW YORK US pages 852 - 854; B. OH et al: "Critical current densities and transport in superconducting YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> -d films made by electron beam coevaporation" * page 852 * * page 852 *	1, 2, 5, 6	H01L39/12 H01L39/24 C30B25/02 C30B29/16
Y	-----	3, 10	
Y	JAPANESE JOURNAL OF APPLIED PHYSICS. Letters vol. 26, no. 5, May 1987, TOKYO JP pages 876 - 878; M. ONODA et al: "Cristal structures of YBa <sub>2</sub> Cu <sub>3</sub> O <sub>x</sub> and LnBa <sub>2</sub> Cu <sub>3</sub> O <sub>x</sub> (Ln=Ho and Dy)" * abstract *	3	
X	JAPANESE JOURNAL OF APPLIED PHYSICS. Letters vol. 26, no. 7, July 1987, TOKYO JP pages 1248 - 1250; Y. ENOMOTO et al: "Largely anisotropic superconducting critical current in epitaxially grown Ba <sub>2</sub> YCu <sub>3</sub> O <sub>7</sub> -y thin film" * pages 1248 - 1249 * * pages 1248 - 1249 *	1, 2, 5	
Y	-----	10	H01L
P, X	JAPANESE JOURNAL OF APPLIED PHYSICS. Letters vol. 27, no. 1, January 1988, TOKYO JP pages 91 - 93; T. TERASHIMA et al: "Single-cristal YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> -x thin films by activated reactive evaporation" * pages 91 - 92 *	1, 2, 5-9	
P, X	APPLIED PHYSICS LETTERS. vol. 51, no. 26, 28 December 1987, NEW YORK US pages 2263 - 2265; H. ADACHI et al: "Low-temperature process for the preparation of high T <sub>c</sub> superconducting thin films" * the whole document *	1, 4, 5	
The present search report has been drawn up for all claims			
2	Place of search BERLIN	Date of completion of the search 20 AUGUST 1990	Examiner ROUSSEL A.T.
CATEGORY OF CITED DOCUMENTS		<p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or  after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding  document</p>	
<p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another  document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p>			



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